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CDC Presents Evidence of Decline in Perinatal HIV Transmission: Outlines Challenges for Further Reducing Infant Infections

Vancouver, BC--Studies presented by researchers from the Centers for Disease Control and Prevention (CDC) at the XI International AIDS Conference reinforce earlier findings that perinatal HIV transmission can be reduced by treating mother and child with zidovudine (ZDV). "Before 1994, when our ZDV treatment guidelines were published, 21% of the children in our study were infected. Since the guidelines, it's dropped to 10%," says R.J. Simonds, M.D., one of the CDC researchers.

"The best way to prevent perinatal HIV transmission is to prevent HIV infection in women," says Helene Gayle, M.D., M.P.H., Director of CDC's National Center for HIV, STD, and TB Prevention. "That being said, it is clear that we can greatly reduce the risk of HIV transmission from an infected mother to her child. The key is providing pregnant women easy access to prenatal care early in pregnancy and routinely giving them information about the benefits of knowing their HIV serostatus and then offering and encouraging an HIV test. We must also ensure that women have access to ZDV and other needed medical care, for themselves and their infants, and that health care providers are prepared to care for HIV positive pregnant women."

Gayle notes that studies presented by Simonds and another CDC researcher Richard Steketee, M.D., support ZDV's efficacy, but adds that other factors also play a role in reducing transmission. "Preventing mother-to-child HIV transmission may require changes in obstetric

practices," she says. "Our studies show an increased risk of infection when the mother's membranes have ruptured more than 4 hours before delivery. With shorter duration of ruptured membranes, we saw a reduction in the rate of transmission." Other characteristics that affect perinatal transmission are mothers' CD+4 counts of less than 500 and stage of the mother's illness. "The bottom line is that the sicker mom is, the more likely the baby will be infected. But even when mothers are very sick, ZDV still helps prevent transmission," Gayle says.

Related studies presented by CDC researchers addressed the role of these and other factors in reducing perinatal transmission. Research by Brenda Seals, Ph.D. demonstrated that the majority of women infected with HIV are interested in ZDV treatment during pregnancy and for their children after birth. But women's interest in and commitment to adhering to the ZDV treatment regimen seems particularly sensitive to physicians' attitudes, underscoring the importance of educating health care providers about the benefits of ZDV during pregnancy. A study presented by Sherry Orloff, M.P.H. showed that ZDV use has increased since the publication of the ZDV treatment guidelines, but is still variable by hospital. Researchers examined rates of ZDV use in hospitals in the New York City area, Atlanta and Baltimore and found that usage ranged from 33% to 90% of enrolled mothers, depending on the hospital and the populations it served. The lowest rates of ZDV use were among women who used cocaine during pregnancy and women with no HIV related symptoms or illnesses.

In another study, Anna Shakarishvili, M.D. and fellow researchers studied the association of HIV transmission and no or late prenatal care with demographic, social, and other characteristics of infected women in Texas. "The data show that some women receive very late or no prenatal care and that lack of timely care is associated with having less than 12 years of education and being unmarried," Shakarishvili says. "To reduce perinatal HIV transmission and

other adverse pregnancy outcomes, comprehensive interventions to increase early prenatal care are urgently needed." Her conclusion was underscored by research presented by Jeanne Bertolli, Ph.D. showing that breastfeeding, a known route of perinatal transmission, was much more common among women whose HIV infection was not known before delivery. In contrast, infected women who received comprehensive prenatal care, including routine counseling and voluntary HIV testing, were less likely to breastfeed their babies.

Finally, an economic analysis by Paul Farnham, Ph.D. and others at CDC shows that prenatal care including HIV counseling and testing and ZDV for infected mothers and their children is cost effective. "Without intervention, a 25% mother-to-infant transmission rate would result in approximately 1,750 HIV-infected infants annually in the U.S., and lifetime medical costs of $282 million," Farnham says. "We estimated the cost of intervention at $67.6 million, preventing 656 infant HIV infections with a savings of $105.6 million in medical care costs, and a net cost-savings of $38.1 million. These results strongly support routine counseling, voluntary testing and ZDV use."

It is possible that these savings could be increased, if research shows a shorter course of ZDV during pregnancy is just as effective. Several clinical trials of short-course ZDV during pregnancy are underway in sub-Saharan Africa. "In developing countries, the extensive ZDV course recommended in the U.S. is not feasible." Gayle notes. "If we can demonstrate that a short course works, we have a promising advance for addressing the terrible toll perinatal transmission takes internationally." A model presented by CDC researcher Gordon Mansergh, M.A. indicates that a national perinatal HIV prevention program in sub-Saharan African countries would reduce transmission and could provide significant societal savings, after a substantial initial investment in public health infrastructure and drugs.

"We have made significant gains in the U.S. and worldwide in translating science into life-saving prevention," Gayle says. "As is always true with HIV prevention, the solutions aren't simple or easy to implement. But the strides we are making in perinatal prevention clearly document the benefits."

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